

CONSUMERLAB



ERICSSON

PERFORMANCE SHAPES SMARTPHONE BEHAVIOR

Understanding mobile broadband
user expectations in India

An Ericsson Consumer Insight Summary Report
July 2014

CONTENTS

CONSUMER PERCEPTION VS. REAL PERFORMANCE	3
OUR PHONES, OUR LIVES THROUGH THE CONSUMER'S EYES	4
TV IN YOUR POCKET	6
BETTER CONNECTIVITY SHAPES BEHAVIOR	8
	10

METHODOLOGY

This Ericsson ConsumerLab report analyzes consumers' expectations and requirements for mobile broadband in India. We aim to gauge consumer perception around mobile broadband network performance in order to determine if there is a correlation between perception and reality.

As smartphone connectivity increases in India, we also seek to understand if consumer usage patterns and satisfaction are changing as a result, and the role that mobile apps play in creating new habits.

The report makes use of both subjective and objective research methodologies. We combine a consumer perception survey with on-device measurements to paint a picture of mobile broadband performance in terms of user satisfaction and needs, changes in behavior, app usage, data consumption and key metrics that drive network performance.



Qualitative research

In-depth interviews were conducted with 18 mobile broadband users across 3 cities (Delhi, Mumbai and Bangalore) to explore how smartphone users build perceptions around the quality of the mobile internet experience delivered to them.

On-device mobile measurements

A panel of 4,000 Android smartphone users with an on-device metering app was set up by a third-party research agency to understand smartphone user behaviors and mobile broadband experience. The sample covered mobile broadband and non-mobile broadband smartphone users in 18 cities across India.

Consumer perception survey

Over 2,000 smartphone users, of whom 85 percent use mobile broadband, from the panel spread across 15 cities in India were interviewed to understand perceptions built around mobile broadband performance. Around 30 percent of mobile broadband users in our sample were small business owners or self-employed professionals. The sample is representative of the opinion of roughly 100 million smartphone users in the country including 60 million mobile broadband users.

THE VOICE OF THE CONSUMER

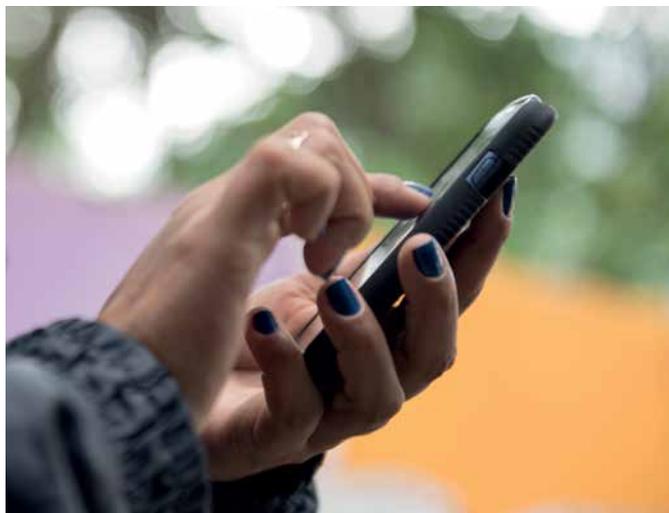
Ericsson ConsumerLab has close to 20 years' experience of studying people's behaviors and values, including the way they act and think about ICT products and services. Ericsson ConsumerLab provides unique insights on market and consumer trends.

Ericsson ConsumerLab gains its knowledge through a global consumer research program based on interviews with 100,000 individuals each year, in more than 40 countries and 15 megacities – statistically representing the views of 1.1 billion people. Both quantitative and qualitative methods are used, and hundreds of hours are spent with consumers from different cultures.

To be close to the market and consumers, Ericsson ConsumerLab has analysts in all regions where Ericsson is present, developing a thorough global understanding of the ICT market and business models.

All reports can be found at:
www.ericsson.com/consumerlab

CONSUMER PERCEPTION VS. REAL PERFORMANCE



Smartphones are growing not only in popularity, but also in their features and capabilities. New apps and improved mobile broadband connectivity mean users can do more with their phones, in more places and at more times during the day or night. In India, the average time spent on apps has increased 63 percent in the past 2 years, and the time spent on smartphones has increased 20 percent. This growth has led to changes in consumers' phone habits as well as their expectations about the quality of mobile internet experience.



KEY FINDINGS

Apps and smartphones are being used in new situations

- > Improved connectivity means consumers are using their phones and apps in new ways and situations, such as streaming videos while commuting or shopping while at work. New users are most interested in social and chat apps, while 40 percent of mature users are exploring the long tail of mobile apps.

Indian mobile users value mobile broadband connectivity

- > 84 percent of mobile broadband users do not want to return to a time before mobile broadband. 33 percent of small business owners state that mobile broadband has helped make their business more visible. As only one-third of smartphone users have access to Wi-Fi, mobile broadband connectivity is an attractive option for most.

Network performance is being redefined by consumer perceptions

- > Smartphone users often build perceptions based on measures such as how many times their internet connection drops or how quickly apps download. The majority of issues faced by smartphone users today impact these perception drivers, leading to low consumer advocacy.

Mobile video usage is evolving

- > For one-third of smartphone owners, their phones are the only screen they use to view online mobile video. The most popular way of consuming mobile videos is through chat apps – one in three watches videos in this way. Consumers prefer to stream videos rather than download, but 4 out of 10 mobile videos are interrupted by buffering or stalling.

Good network performance shapes smartphone usage behavior

- > Consumers satisfied with mobile data performance experience three times better web page load times, spend more time streaming videos via apps and spend more time connected to mobile broadband networks. Smartphone usage patterns are strongly influenced by network speed variations, while wide availability of mobile broadband connectivity everywhere can double data traffic usage.



OUR PHONES, OUR LIVES

Research using on-device measurements revealed that Indians spend over 3 hours a day on their smartphones, and 25 percent of consumers check their phones over 100 times a day. Apps account for around one-third of the time spent on smartphones. The majority of this time is spent on chat, social media, and gaming apps. The rate of app usage is expected to increase in the future.



“Apps and connectivity have helped me expand my business in ways I could never have imagined.”

Female, 35, Housewife and self-employed, Mumbai

Mature with age

First time smartphone users' habits differ compared to mature users. Social and chat apps are the reason why most new users buy a smartphone – apps such as Facebook and WhatsApp are among the top two apps that almost every Indian smartphone user indicates they cannot live without.

But this fascination tends to subside the more experienced they become with their smartphones. 40 percent of mature smartphone users say that their usage is no longer limited to social purposes. Our survey found that 24 percent of smartphone owners use mobile apps such as WhatsApp and WeChat for business purposes, such as selling products and

services, expanding their operations, sourcing new customers and even for customer service. Without the availability of Wi-Fi or fixed broadband at home, 33 percent of smartphone users say that mobile broadband access has helped them make their business more visible by enabling access to mobile apps.

Maturity is an important dimension in mobile broadband behavior. Mature users consume almost twice as much data as new users. As consumers explore more apps and services relevant to their interests and needs, mobile broadband usage is set to grow.

Here, there, everywhere

The rise in the adoption of mobile broadband connectivity has led to consumers using their phones

at new times of the day and for new purposes. On-device mobile measurements help in providing a context to activities that consumers perform on their mobile phones, providing in-depth insight into how often and when an app is used, and for how long. While it was always believed that smartphone usage peaked late in the evening, behavioral measurements indicate that mornings are the new primetime for smartphone use with a host of different activities being undertaken. For instance, 61 percent of smartphone users browse the internet on their phones before they start their day. Streaming videos early in the morning is also becoming more common, as is online shopping late in the evening, which 17 percent of smartphone users do.

Figure 1: Smartphone usage trends in India

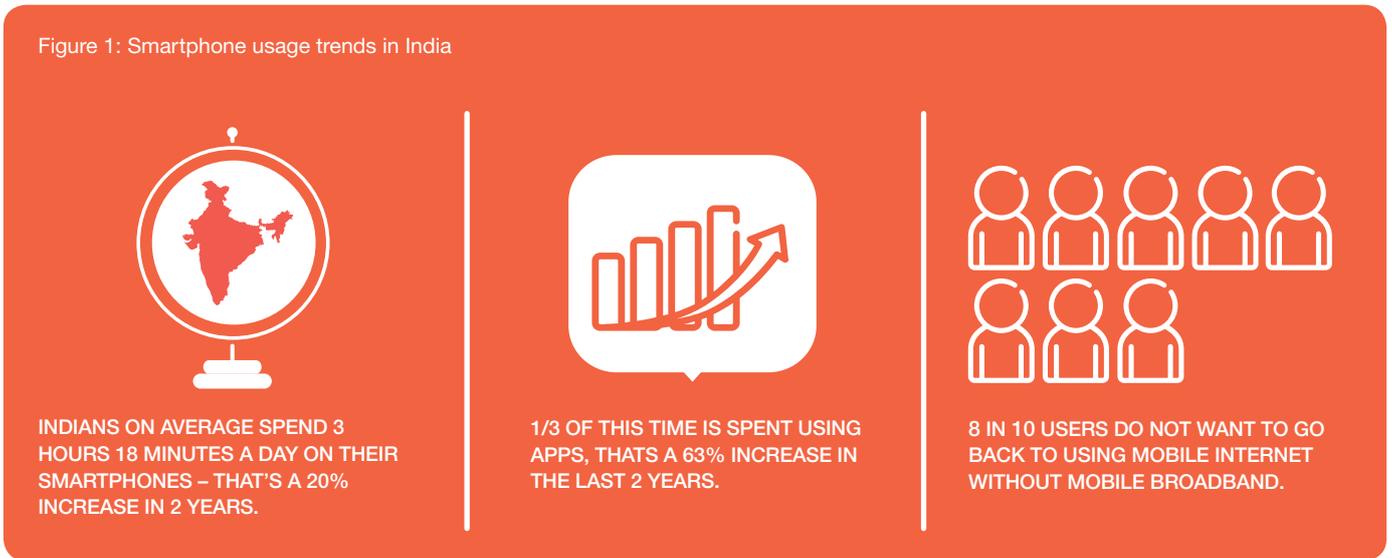


Figure 2: Business usage for apps



Figure 3: New usage patterns

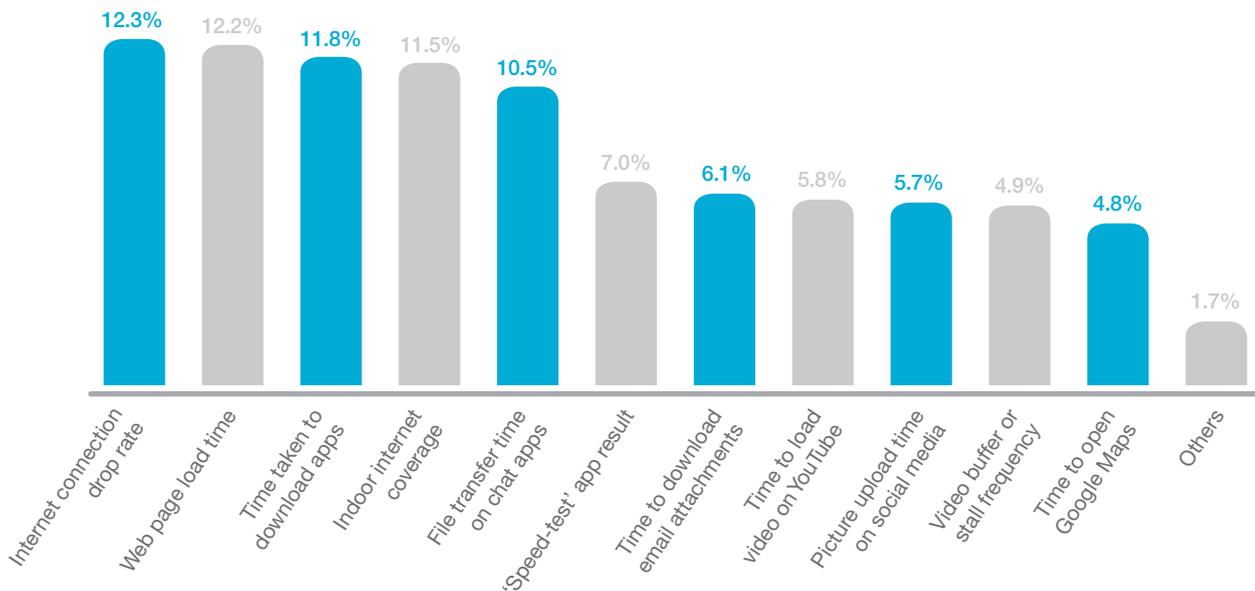


Source: Ericsson ConsumerLab, Performance shapes smartphone behavior, India, 2014
 Base: All smartphone users

THROUGH THE CONSUMER'S EYES

Network performance is being redefined based on how consumers build perceptions. Figure 4 shows that Indian mobile users judge the quality of their network based on how often the internet connection drops and how quickly web pages load. Other top perception drivers include time taken to download apps, indoor coverage, and time taken to transfer media, such as videos and pictures via chat apps.

Figure 4: How mobile broadband users build perceptions on internet performance



Source: Ericsson ConsumerLab, Performance shapes smartphone behavior, India, 2014
Base: Mobile broadband smartphone users



43%

of web pages took more than 10 seconds to load

The above-mentioned perception drivers are also among the top issues facing consumers and as two out of every five users report issues such as slow loading of web page, poor network coverage, internet connection drops and video stalling or buffering almost daily. On-device mobile measurement research showed that a mobile broadband smartphone user does not have access to the network 44 percent of the time. There are many reasons why users are unable to connect, such as when they move to a location with poor coverage or to an area with no coverage.

A higher number of mobile broadband issues are faced indoors in highly urbanized city environments such as Delhi, Mumbai, Kolkata and Chennai on account of more time being spent on smartphones while at home.

As mobile broadband smartphone users begin using different apps in new situations, they expect these apps to work seamlessly, no matter where they are. From a user perspective, app coverage is the area within a mobile network's coverage that can deliver sufficient performance to run an application at an acceptable quality level. However, smartphone users are struggling to get apps to work, and the most serious issue reported by consumers is dropped internet connections when indoors.

In addition to struggling to connect, consumers experience issues with the speed of mobile networks. Our study revealed that there is a discrepancy between smartphone users' expectations and their actual experience using a network. For example, Indian smartphone users expect mobile web pages to take around three seconds to load. In reality, the median web page load time for a leading mobile broadband operator's network in India is around 8 seconds, and 43 percent of web pages took more than 10 seconds to load.

Figure 5: Issues with mobile web page loading

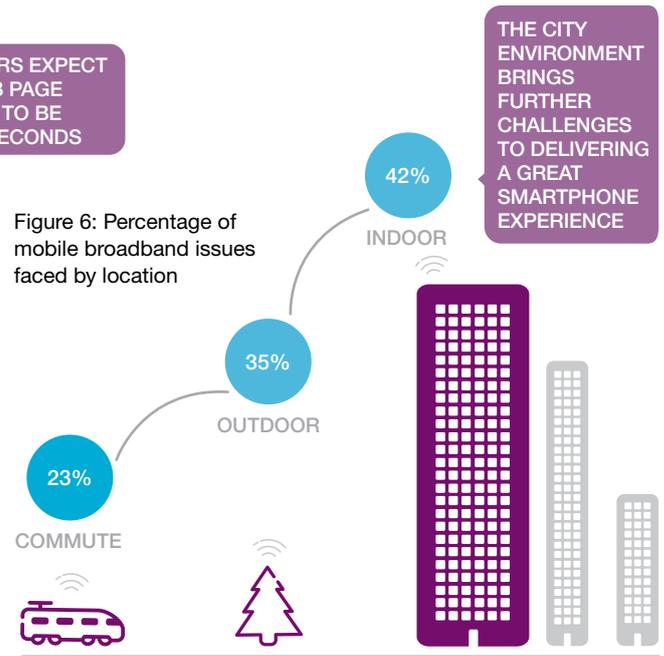
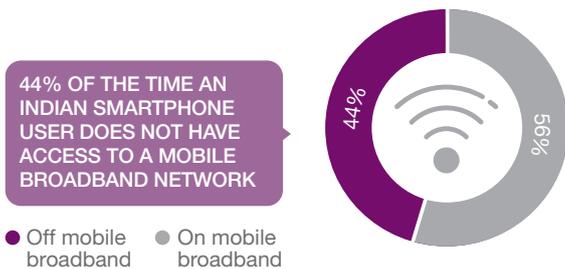
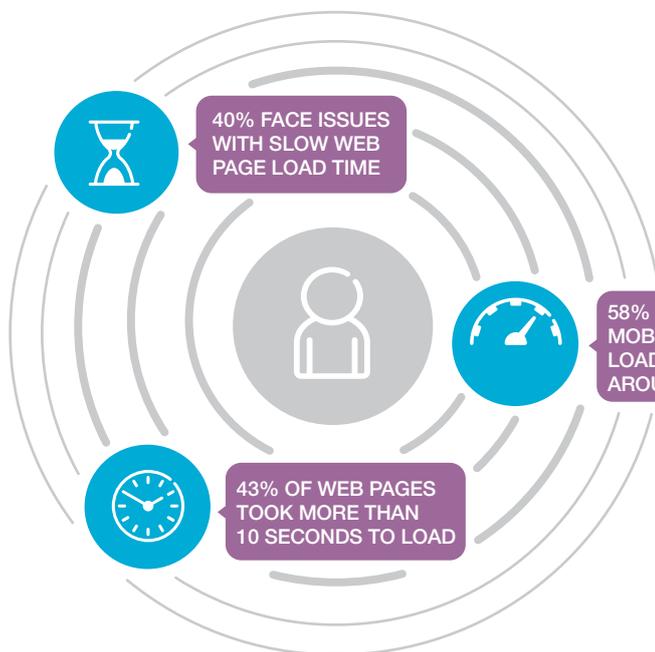


Figure 6: Percentage of mobile broadband issues faced by location

Source: Ericsson ConsumerLab Performance shapes smartphone behavior, India, 2014
Base: Mobile broadband smartphone users

What matters most

Mobile broadband smartphone users were asked to choose elements that are most important in delivering a great smartphone mobile data experience. The results reveal that indoor coverage, speed and network availability lead by far in share of importance, followed by device-related features such as memory and processing capability and battery life. However consumers attach greater value to app performance, especially faster loading of apps and the service provider's ability to solve mobile data issues as and when they arise over cheap mobile data tariffs or plans.

Keeping new customers satisfied

The importance of various elements that govern a smartphone mobile data experience differed based on the length of time consumers have had their smartphones. Since new users primarily upgrade to smartphones to access apps, they demand that all of their apps load faster than websites and that the quality and interface of apps is good.

New mobile broadband smartphone users are emerging from smaller cities where network coverage is still patchy at best, but they have high expectations about how their device, connectivity and apps perform. These new users are less likely to recommend their mobile broadband service provider to family and friends when compared to mature users. The reason for low consumer advocacy is the number of issues new users face – around one-third experience more than six issues daily. There is a high correlation with a low net promoter score and when consumers' expectations are not met.

Smartphone users have devised their own ways to deal with poor mobile internet experience. Around a third of users will restart their phone, uninstall apps they do not use often, or turn to downloading an app that monitors their mobile data experience. While they do take some steps to improve their experience, they are not averse to spending more for a better one – 76 percent of consumers are willing to pay more for a guaranteed better mobile data experience.

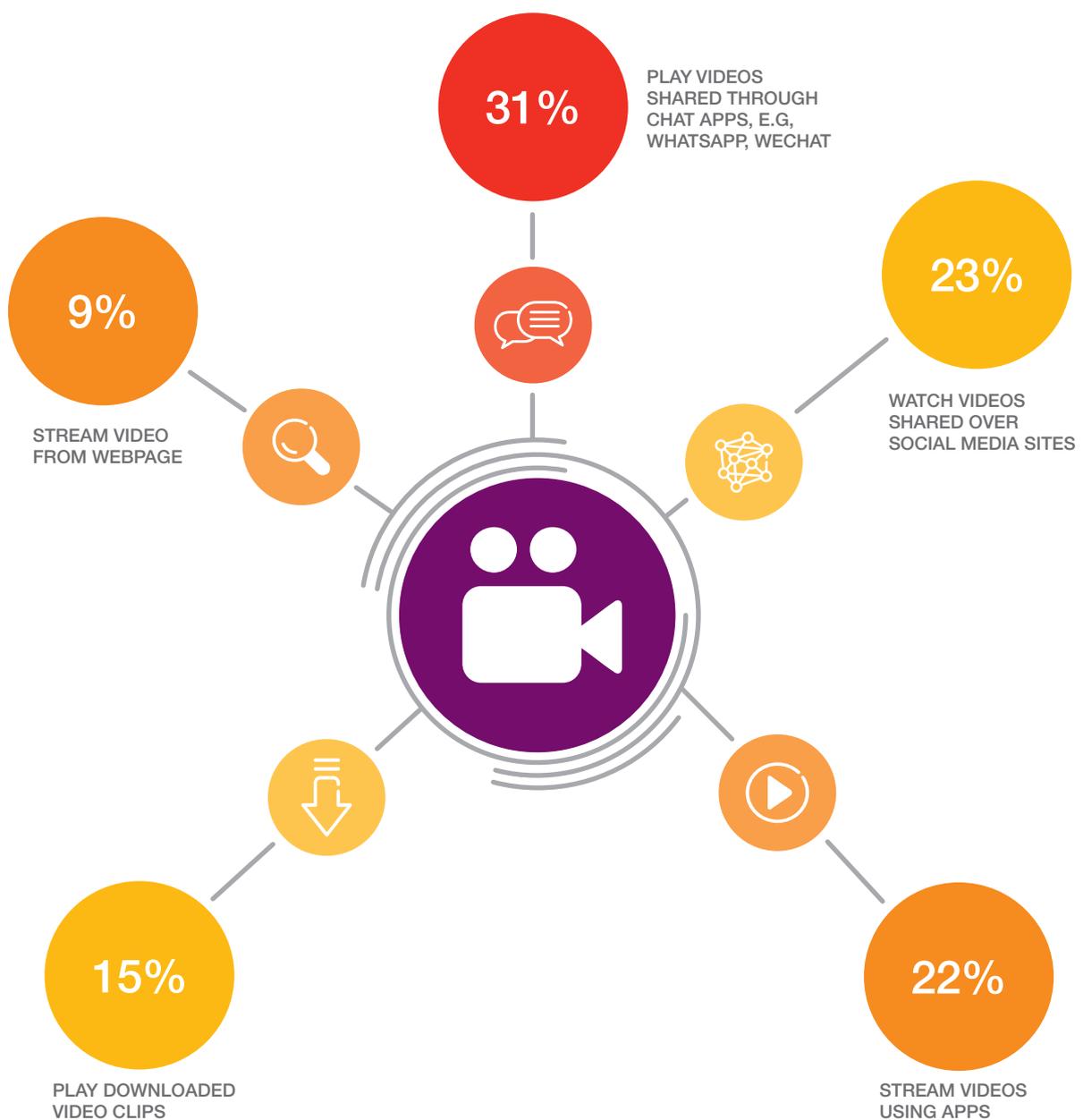
TV IN YOUR POCKET

Social media, browsing and app downloads still drive bulk of mobile broadband data traffic today, but video consumption is growing.

Figure 7 shows the most popular ways in which consumers view mobile videos, with chat apps, social websites and video streaming apps at the top. With chat apps being the most popular, smartphone users

are now sharing more media and videos over chat. As a result, users are increasingly viewing short snippets of video content or micro-videos.

Figure 7: How do smartphone users consume mobile video most often?



Source: Ericsson ConsumerLab, Performance shapes smartphone behavior, India, 2014
Base: Mobile broadband smartphone users who watch mobile video

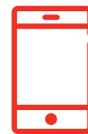


This emerging trend of viewing videos on mobile devices has led to consumers spending more time on their smartphones than watching TV. Indian smartphone users now spend 191 minutes per day on smartphones, compared to 128 minutes watching TVs.

Video goes mobile

With increased access to mobile broadband, consumers are viewing videos on-the-go more often and in more places than before as shown in Figure 8. Users are now consuming mobile videos in new situations, for example while commuting, shopping or having dinner.

Although smartphone users are consuming more videos, 44 percent state they often do not watch



SMARTPHONES

used more than TVs today

mobile videos due to lengthy delays when loading. While 65 percent of users said that they prefer video streaming to downloading videos on their phones, 4 out of every 10 videos they play have issues with buffering and stalling, lasting from seconds to minutes. This is a source of frustration among users, and causes some to abandon their sessions. As consumers watch more mobile videos in the coming years, they will tolerate delays even less.

Figure 8: Where do consumers watch mobile video content?



40%

LATE AT NIGHT IN BED



25%

WHILE COMMUTING



23%

WHILE HAVING DINNER



20%

WHILE SHOPPING

Source: Ericsson ConsumerLab, Performance shapes smartphone behavior, India, 2014
 Base: Mobile broadband smartphone users who watch mobile video

BETTER CONNECTIVITY SHAPES BEHAVIOR

When smartphone users were asked to rate the quality of the mobile broadband experience they receive, 48 percent said they were pleased with the performance, whereas 9 percent of mobile broadband users considered the performance to be terrible.

To understand these different experiences, key metrics such as web page load time, the amount of time smartphone users had access to a mobile broadband network and time spent on streaming apps were analyzed. Consumers who were satisfied with their mobile broadband performance had three times lower web page load times, as well as a higher percentage of time with access to a mobile broadband network, compared to unsatisfied users. This is shown in Figure 9. Access to a fast network also correlated to increased app usage, especially video streaming apps.

▶ SATISFIED USERS

spent 42% more time streaming online videos via apps compared to unsatisfied users.

Satisfied consumers also tend to use more data than those who are unhappy with their network performance. Figure 10 shows that only about a third of users are able to access internet over mobile broadband every time they attempt it. Those who can connect whenever they want consume twice as much data per month.

Figure 9: Consumer perception is highly correlated to real performance



Source: Ericsson ConsumerLab, Performance shapes smartphone behavior, India, 2014
Base: Mobile broadband smartphone users



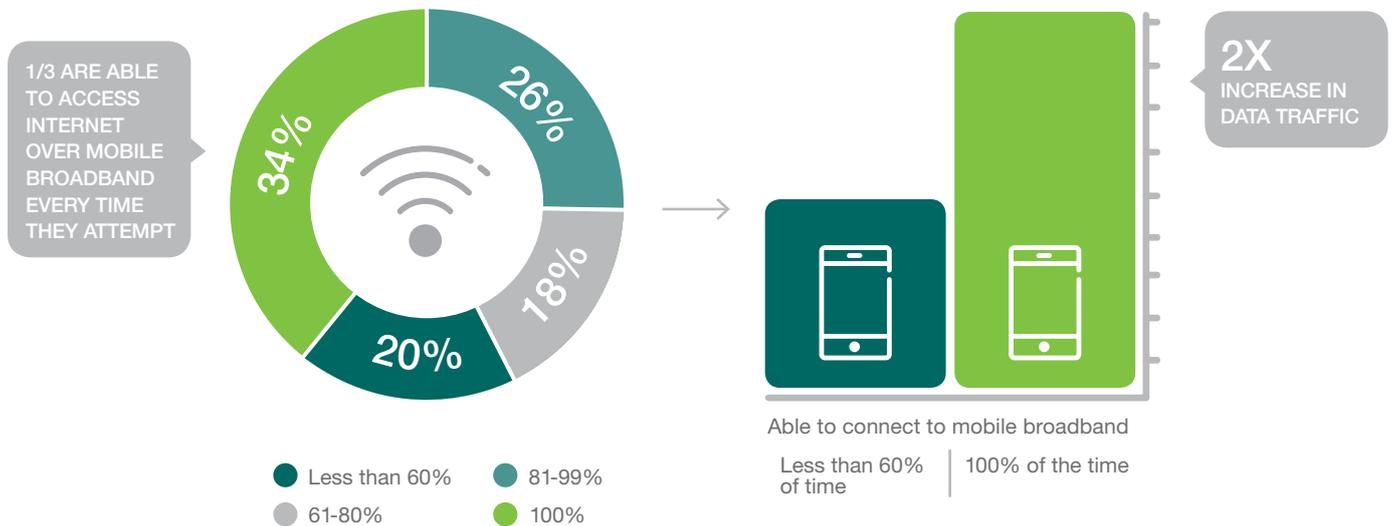


Our research indicates that network speed variations also have an impact in shaping smartphone behavior. Consumers receiving higher speeds spend twice as much time streaming videos and browsing the internet compared to those who experience slower speeds.

Users with slower network speeds compensate for their slow network connection by spending more time on social websites such as Facebook, playing games offline and spending more time on chat apps, which require less data and are not as reliant on a fast network.

Figure 10: Percentage of time mobile broadband users are able to connect

Data consumption per month



Source: Ericsson ConsumerLab, Performance shapes smartphone behavior, India, 2014
Base: Mobile broadband smartphone users

RESEARCH INSIGHTS GAINED

This report has shown that mobile broadband connectivity has enabled consumers to use apps and smartphones in new ways, which is driving an increase in data consumption. However, consumers still face issues which in turn influence how they perceive the quality of mobile data experience delivered to them. Good network performance influences consumer perception and in turn shapes smartphone behavior.

In the future, as consumers accelerate their smartphone usage, their expectations and demands on networks around app coverage and network speeds will continue to grow.



Ericsson is the driving force behind the Networked Society – a world leader in communications technology and services. Our long-term relationships with every major telecom operator in the world allow people, businesses and societies to fulfill their potential and create a more sustainable future.

Our services, software and infrastructure – especially in mobility, broadband and the cloud – are enabling the telecom industry and other sectors to do better business, increase efficiency, improve the user experience and capture new opportunities.

With more than 110,000 professionals and customers in 180 countries, we combine global scale with technology and services leadership. We support networks that connect more than 2.5 billion subscribers. Forty percent of the world's mobile traffic is carried over Ericsson networks. And our investments in research and development ensure that our solutions – and our customers – stay in front.

Founded in 1876, Ericsson has its headquarters in Stockholm, Sweden. Net sales in 2013 were SEK 227.4 billion (USD 34.9 billion). Ericsson is listed on NASDAQ OMX stock exchange in Stockholm and the NASDAQ in New York.

The content of this document is subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.